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ABSTRACT

In a study of adolescent language, eight adolescents were recorded speaking in response to three classes of stimuli: TAT cards, photographs of "hippie" scenes, and discussion topics relevant to adolescent adjustment. Every fifth word of their transcribed speech was eliminated (the Cloze procedure), and these experimentally altered transcripts given to adolescent peers and adults professionally trained in the field of mental health, to decode by filling in the missing words. Results were: (1) The speech of the adolescents differed significantly in how understandable it was, primarily due to individual variability in vocabulary, syntax and verbal style; (2) The language used by the adolescents differed in response to the different classes of stimuli, and (3) Adult professionals were significantly more successful than the adolescent peers in decoding the teenage speakers. The results indicate the sensitivity of the Cloze procedure to individual characteristics of adolescent speech and the qualities of language affected by stimuli evoking the speech, and that the "generation gap" is a reflection of disparate values rather than an inability to communicate, or that professional training helps overcome this. (Author/KS)

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# Exploration of Adolescent Language

My exploration of adolescent language derives from a general interest in adolescents and in various attributes of their communication process. The study I report on today is a specific look at three related factors: (1) the extent to which one teenager's speech differs from another's; (2) whether or not their speech varies appreciably when it is related to different topics of conversation; and (3) whether their language is better understood by other adolescents or by adult mental health professionals. To examine adolescent language, I used the Cloze procedure, a particularly valuable measure of language communality because it is sensitive to many readability determinants rather than to only a few. Scores deriving from this procedure are known to be highly correlated with intelligence, however, so it was necessary to determine the degree to which this correlation might be a confounding factor.

Figure 1 shows a representation of Osgood's model of information processing, which is basic to the design of this study. Input to an encoder evoke in him a response, or message, which he transmits to a decoder. The decoder, in turn, processes the information he receives and emits it as output.

Figure 2 diagrams the steps of Part 1 of the study. You can see that they parallel the steps of Osgood's model. On the left is the input: three stimuli, representing three stimulus classes (TAT 19 - snow hut; pot party; topic). The stimuli were presented individually to four adolescent encoders (Andy, Bill, Carol and Diana) who responded verbally to each stimulus. These adolescents and the four who served as encoders in Part 2 of the study were selected at random from a group of ninth- and tenth-grade public school

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volunteers. Their mean age was 15.2 years, with a range from 14.6 to 15.8 years. Their mean IQ, measured by the CMMT (California Mental Maturity Tests) was 123, with a range from 108 to 128. The stories that Andy, Bill, Carol, and Diana told were recorded, transcribed, and then experimentally altered according to the Cloze procedure. Rather than remind you of the Cloze procedure in words, I've illustrated it in Figure 3, an excerpt from one of the stories. As you can see, every 5th word of the typescript was deleted and replaced by a blank. I've written in script the words that were deleted. If time permits, I will discuss with you some interesting features of this excerpt, including the empty blank #22.

To return to Figure 2, the stories told by the encoders were the language samples that served as messages. Cloze packets were prepared that contained: a cover sheet of instructions, a sample story extracted from a piece of popular fiction that would serve as a standard by which decoding ability could be assessed, and the 12 messages (3 from each of the 4 encoders). Within each packet the order of the encoders was randomized.

The decoders in Part 1 of the study were a group of 40 adolescents (20 boys and 20 girls). They were volunteer Ss from the ninth and tenth grades of a public school, a population that was independent of the one from which the adolescent encoders were obtained. Their ages ranged from 14.5 to 15.8, with a mean of 15.1 years. Their mean IQ, measured by the Differential Aptitude Test, was 117.3 with a S.D. of 13.5. Each S was given a Cloze packet and asked to fill in the blanks in the stories on the basis of the verbal context surrounding them.

The output of the decoders was their performance in the decoding task, i.e., how correct they were in filling in the blanks. Scoring was based on the

criterion of absolute equivalence, and the percent of correct entries constituted a Cloze score. For each decoder, then, twenty-one Cloze scores were computed: his score for the sample story, his score for each one of the 12 separate stories, his total score for the 12 stories, his score for each encoder's 3 stories, and his score for the 4 stories told in response to each of the three stimuli.

The Cloze scores entered as "output" in Figure 2 are the average scores for the decoders of Group 1. In the box of Cloze scores, locate the upper left hand entry of 57.0. That score, 57.0, is the average score of the decoders for the story that Andy (A) told in response to the first stimulus (S1), TAT card #19. To the right are the average scores of the decoders for Andy's stories in response to the second stimulus (58.9), and to the third stimulus (56.0). At the far right under "Total" is the average score of the decoders for all three of Andy's stories. In the rows below are the comparable scores for the stories of Bill, Carol, and Diana. The bottom row of totals are the average scores of the decoders for the stories in response to S1, S2 and S3, across encoders. In the lower right corner, in parentheses, is the grand mean of Group 1 decoders for the entire set of language samples from these four adolescent encoders.

Turn now to Figure 4. Figure 4 diagrams Part 2 of the study - its cross-validation. For input, the same stimulus classes were used, but different samples were employed in two of the classes (TAT #11 dragon; photo of hippie). The encoders were four different adolescents: Ellen, Frieda, George, and Hank. Their stories were the messages, prepared in a manner identical to the one I have described. The decoders were a second group of 40 adolescents, (20 boys, 20 girls), this time recruited from the community

at large rather than from one single school population. Their ages ranged from 13.9 to 17.0, with a mean of 15.4 years. Their mean IQ, measured by the Wonderlic Personnel Test, was 106.5 with a S.D. of 11.9. The output of the decoders of Group 2 are the group mean Cloze scores given in the figure.

Part 3 of the study is diagrammed in Figure 5. The design was repeated, using the language samples of the first 4 adolescents. The difference, in this case, was that the decoders were a group of adult mental health professionals. This group served as a comparison sample of decoders. The group (half males and half females) was composed of psychiatrists, psychiatric nurses, psychiatric social workers, educators, and psychologists ranging in age from 30 to 60 years, with a mean age of 44.6 years. Again, this group's mean Cloze scores are included in the figure.

## RESULTS

1. <u>What Was the Effect of the Language Attributes of the Different Individual Adolescents on How Decodable their Messages Were?</u>

For each decoder the total Cloze scores achieved on each of the four encoders in his set were ranked. Kendall's Coefficient of Concordance (W) was computed in each group of decoders in order to examine the degree of agreement between ranks. In Language Sample Set I, decoded by the adolescents of Group 1 and by the adults, agreement between rankings was significant (.01). The respective W's were .367 and .416. Note in Figures 2 and 5 that the ranking of average Cloze scores among the four encoders of Set I is identical for both groups of decoders, i.e., Andy is easiest to decode; Bill next easiest; then Carol; and Diana is the most difficult. In Set II, (Figure 4) decoded by the adolescents of Group 2, the W was .614, showing that again

the agreement between rankings was significant (.01).

The sex of the story-teller was not relevant to the rank ordering. In Set I, the two girls (Carol and Diana) were harder to decode than the two boys, but in Set II, the boys (George and Hank) were the more difficult to decode. The IQ's of the story-tellers show no systematic correlation with their relative decodability, but the N of 8 is too small and the range of IQ is too limited to permit any conclusion about this relationship.

Analysis of variance of the data from each decoder group confirmed the results of the separate group analyses and indicated that the main effect in each group was due to the individual adolescent encoders. This main effect accounted for 7, 18, and 13 percent of the variance of Cloze scores in Groups 1, 2, and 3, respectively. (Omega squared)

2. What Was the Effect of Stimuli on the Decodability of Adolescent Messages?

The stimulus classes did differ significantly with respect to the difficulty of the messages they generated, but the main effect for stimuli was a much less powerful one, the average amount of variance accounted for being only 2 percent. In addition, there was a significant encoder-by-stimulus interaction which was due to variable rank ordering of stimuli within the encoders.

3. How Did the Three Groups of Decoders Differ in their Decoding Performance?

To determine meaningful group differences it was necessary to assess the degree to which decoding performance was a function of some general ability in decoding. Direct correlation with intelligence test scores was not possible, since different measures were used for the adolescent groups and no measure was available for the adults. However, the sample story provided a

means of assessing decoding ability by which all three decoder groups could be compared. Scores on the sample story correlated significantly with intelligence test scores in the two groups of adolescent decoders (.61 and .41) and with total Cloze scores in all 3 groups. Thus scores on the sample story could be considered a measure of "ability to decode" per se. On this factor, the three decoder groups differed significantly: the adult decoders were superior (.01) to both adolescent groups, and the first group of adolescents was superior (.05) to the second. When this factor of "ability to decode" was used to correct the performance of the groups in decoding the adolescent language samples (analysis of covariance), group differences were not significant. (adjusted F = 2.0; NS)

Other group differences were negligible. In all three decoder groups, the performance of males and females was comparable. Among the adult decoders, performance did not correlate with the age of the subjects.

## DISCUSSION

In this study, the idiosyncratic verbal message of the individual adolescent is the primary determinant of how decodable, or understandable, he is. This factor is far stronger than the effect of the topic, or stimulus, used to evoke his message. Clearly, the stimulus classes I used did not differ a great deal from each other. Had they differed more, they might have had more effect.

A systematic finding of the study is that Cloze scores are a strong function of the ability of the decoder at the sheer task of decoding. The superior decoding ability of this group of adults may reflect greater intelligence, special experience, or both. Their performance in decoding the adolescent

language samples was not comparably superior, however. Perhaps the more relevant way of putting this would be to say that they were not poorer at the task than the adolescent decoders. A less sophisticated group of adults might not have held their own as well.

Important as decoder intelligence is as a systematic source of variation in Cloze scores, it should be remembered that these scores are also highly sensitive to individual idiosyncrasies in adolescent language and, to a lesser extent, sensitive to different classes of stimuli.

Figure 1. Schematized model of human communication (Osgood)

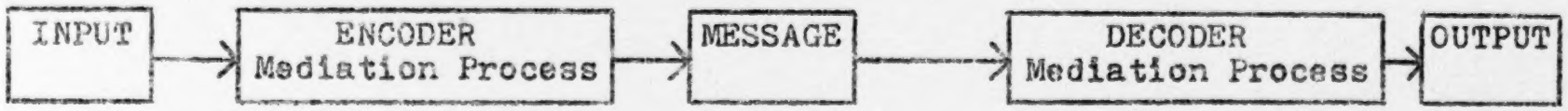
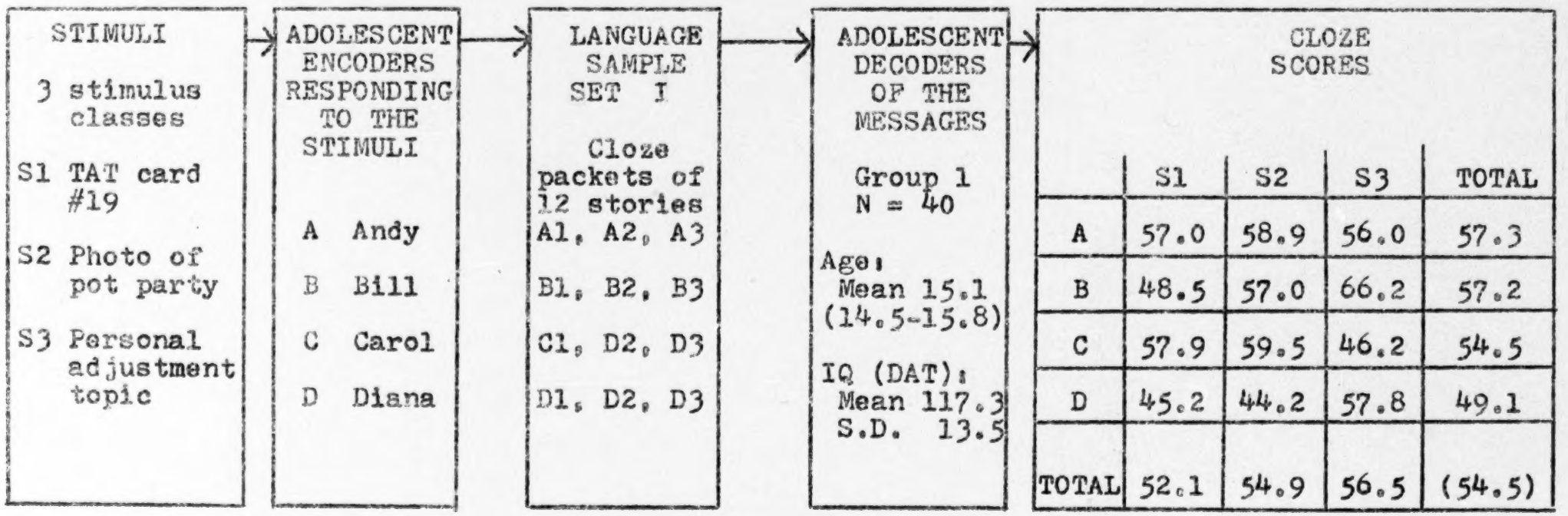





Figure 2. Part 1 of the study

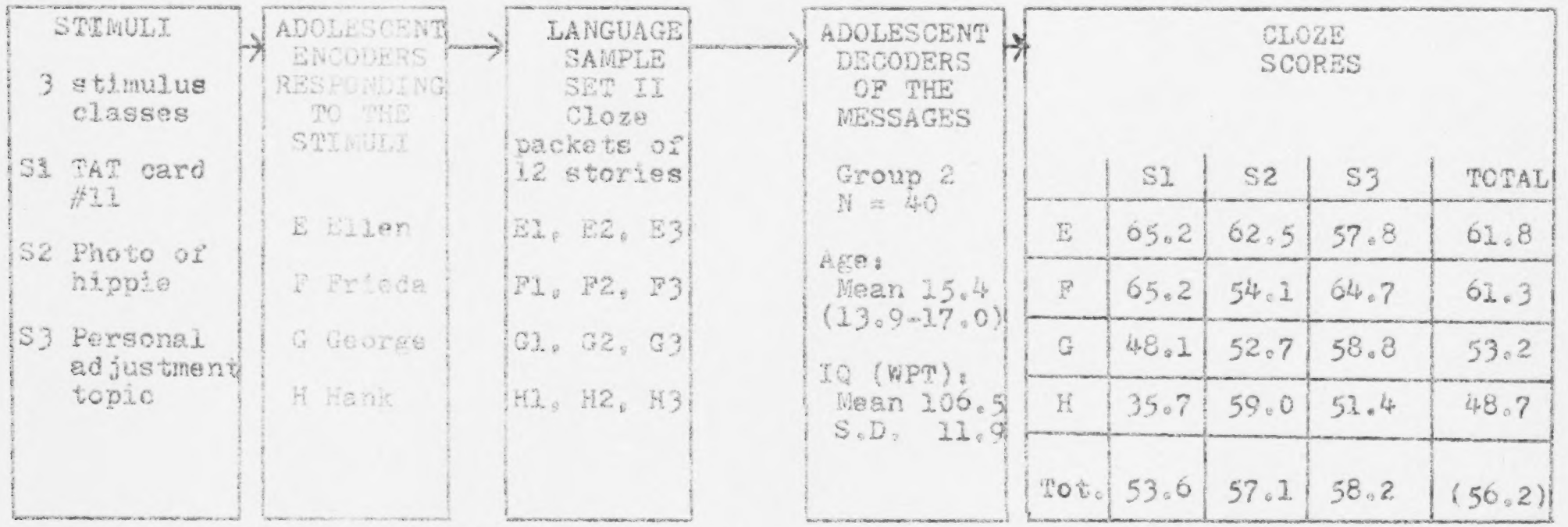



| | S1 | S2 | S3 | TOTAL |
|---|---|---|---|---|
| A | 57.0 | 58.9 | 56.0 | 57.3 |
| B | 48.5 | 57.0 | 66.2 | 57.2 |
| C | 57.9 | 59.5 | 46.2 | 54.5 |
| D | 45.2 | 44.2 | 57.8 | 49.1 |
| TOTAL | 52.1 | 54.9 | 56.5 | (54.5) |

Figure 3. Excerpt from story by Carol in response to S3.

But--*usually* (8) between my parents and *us* (9) we have a fair *communication* (10). And--but this time *she* (11) was very--I can't *even* (12) remember what she was *upset* (13) about, but she got *very* (14) mad at them, and *she* (15) was--when my sister *gets* (16) mad, she's got a *terrible* (17) temper. That is, my *13-year old* (18) sister. And she--oh, *she* (19) got really mad and *she* (20) started screaming. Not really *screaming* (21), but, oh, you know, "_____ (22), you," and "I don't *like* (23) you." But then my *mom* (24) got in there and *my* (25) mom asked her about *something* (26) and she goes, "I *hate* (27) you." But she doesn't *mean* (28) it. My sister uses *words* (29) that fly off the *handle* (30), and half the time *she* (31) doesn't even know what's *she* (32) saying.

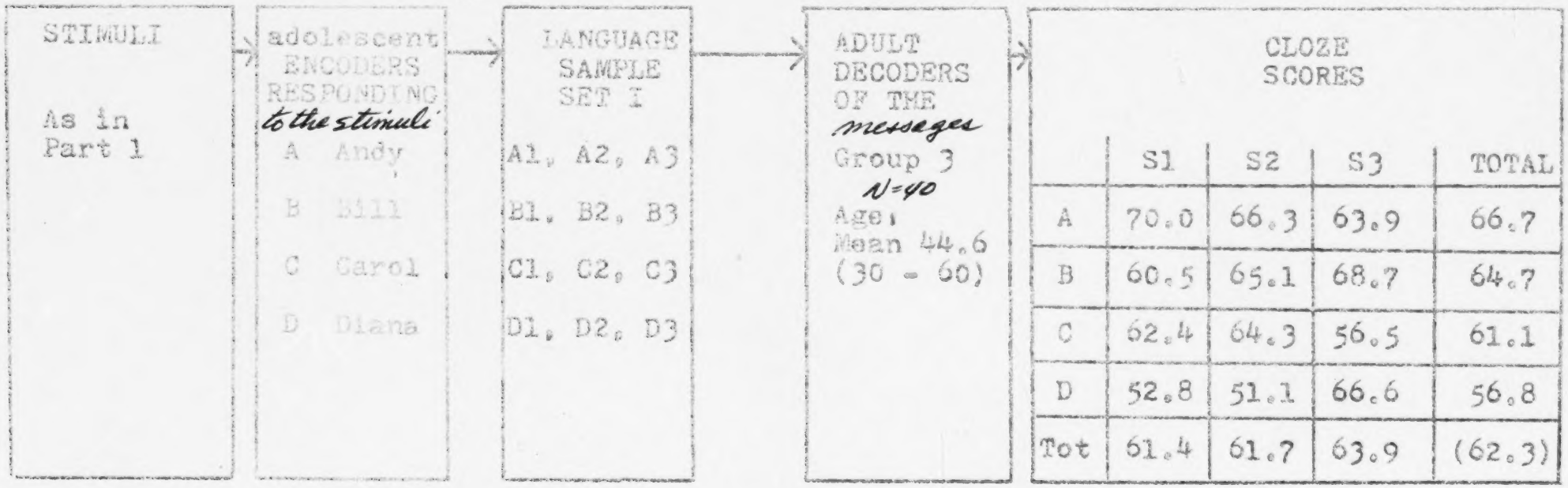
Figure 4. Part 2 of the study




CLOZE SCORES

| | S1 | S2 | S3 | TOTAL |
|---|---|---|---|---|
| E | 65.2 | 62.5 | 57.8 | 61.8 |
| F | 65.2 | 54.1 | 64.7 | 61.3 |
| G | 48.1 | 52.7 | 58.8 | 53.2 |
| H | 35.7 | 59.0 | 51.4 | 48.7 |
| Tot. | 53.6 | 57.1 | 58.2 | (56.2) |

Figure 5. Part 3 of the study




CLOZE SCORES

| | S1 | S2 | S3 | TOTAL |
|---|---|---|---|---|
| A | 70.0 | 66.3 | 63.9 | 66.7 |
| B | 60.5 | 65.1 | 68.7 | 64.7 |
| C | 62.4 | 64.3 | 56.5 | 61.1 |
| D | 52.8 | 51.1 | 66.6 | 56.8 |
| Tot | 61.4 | 61.7 | 63.9 | (62.3) |